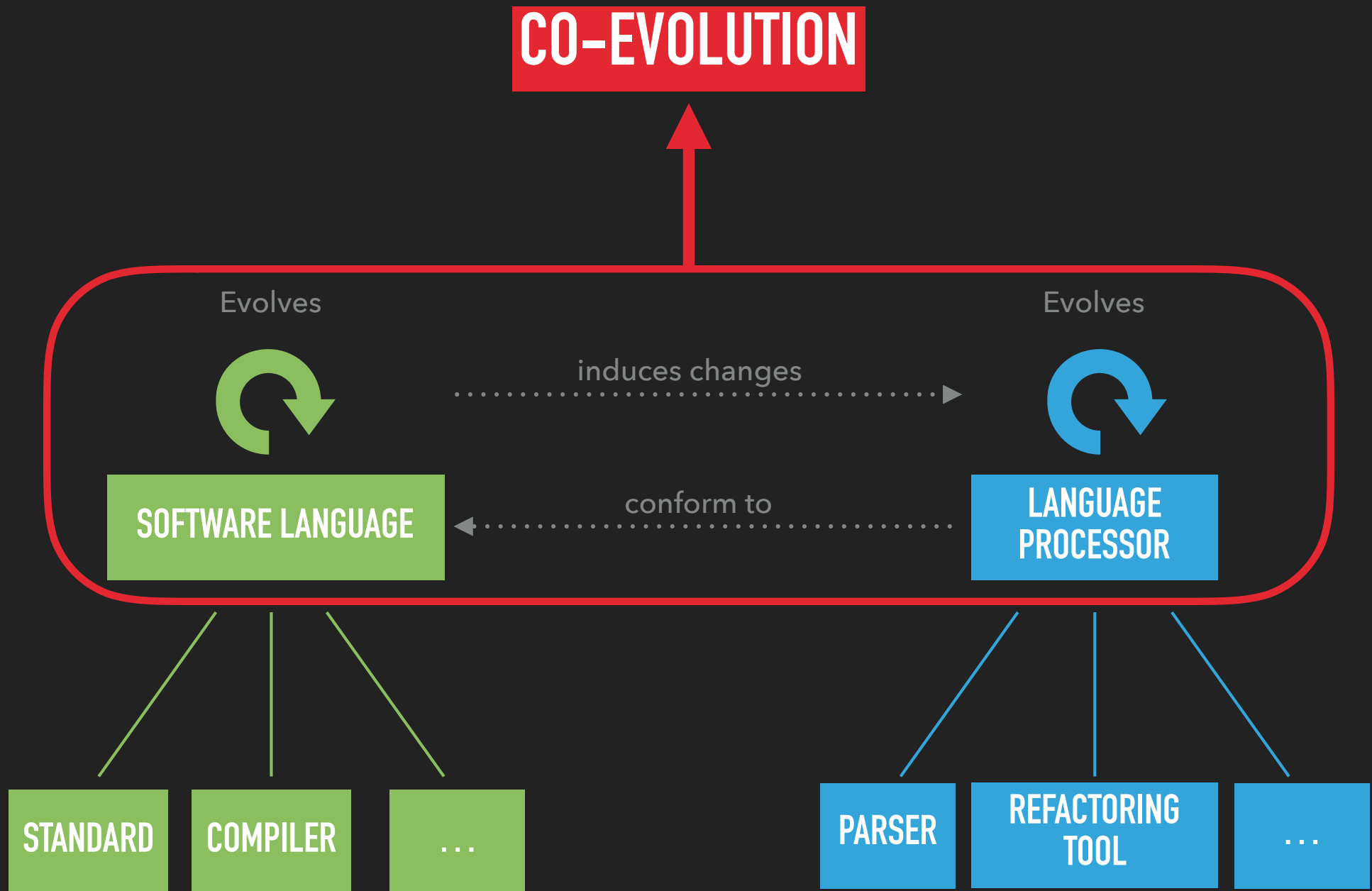


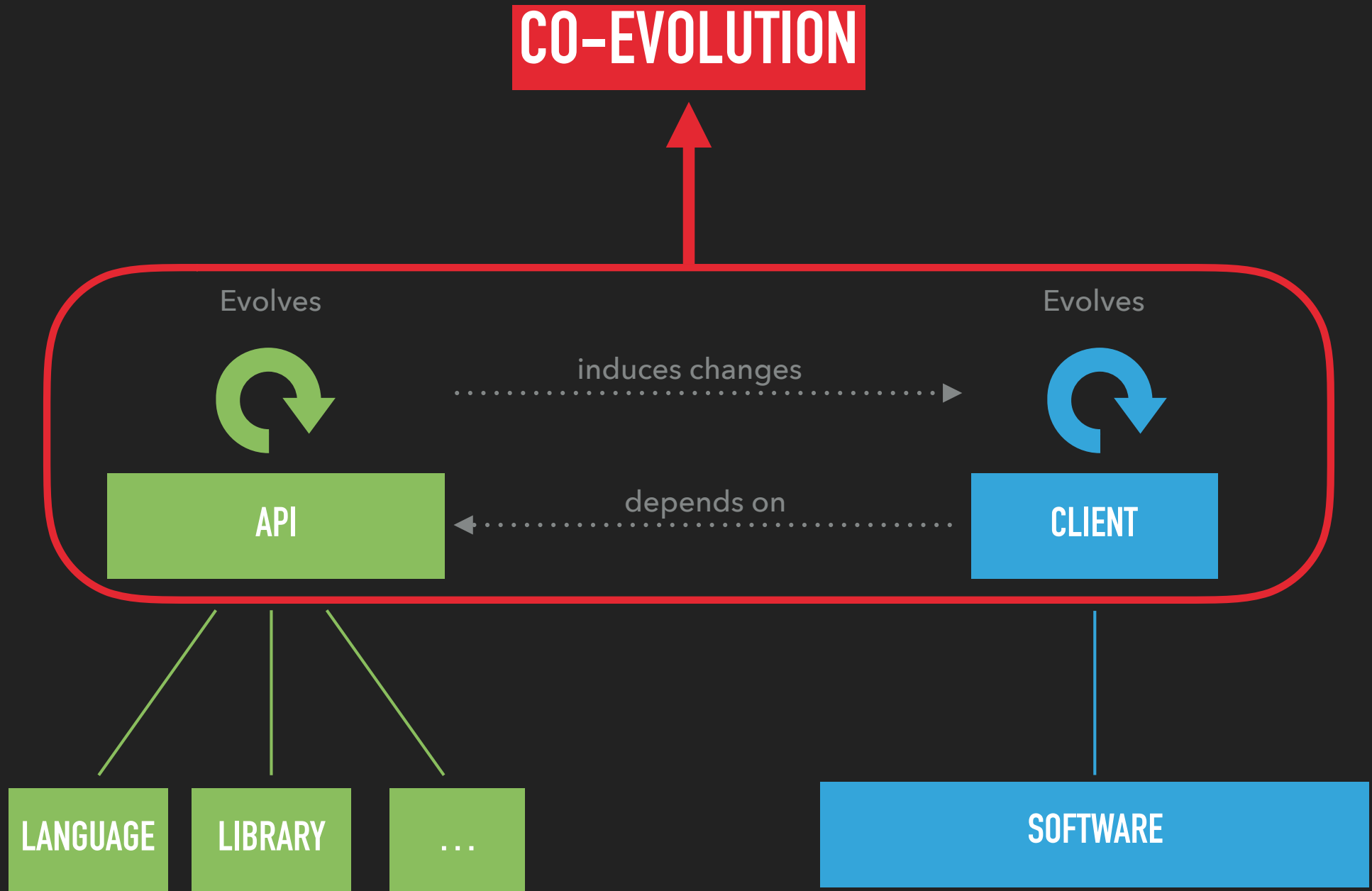
Anna Eilertsen
Anya Bagge
University of Bergen,
Norway



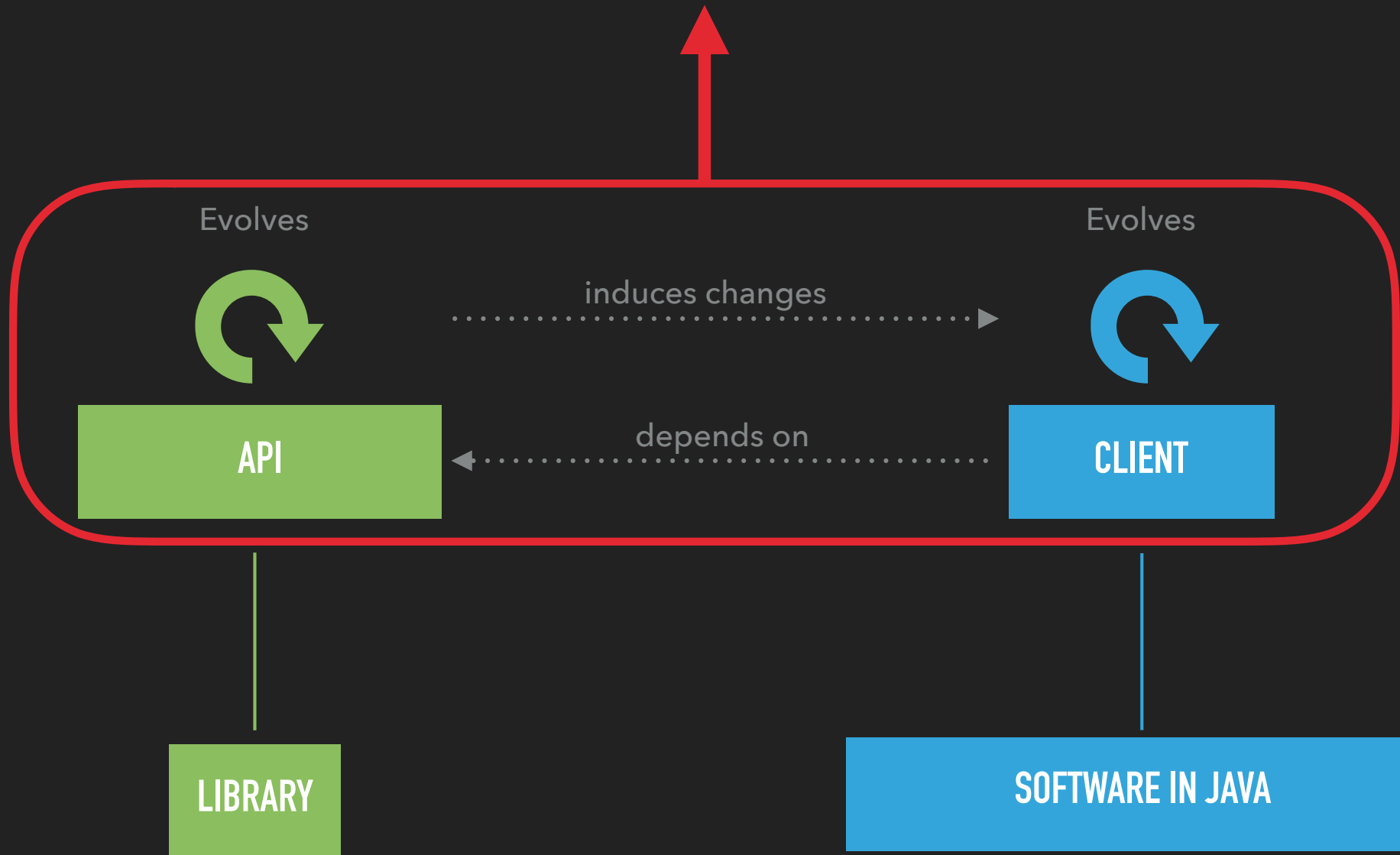
EXPLORING API/CLIENT

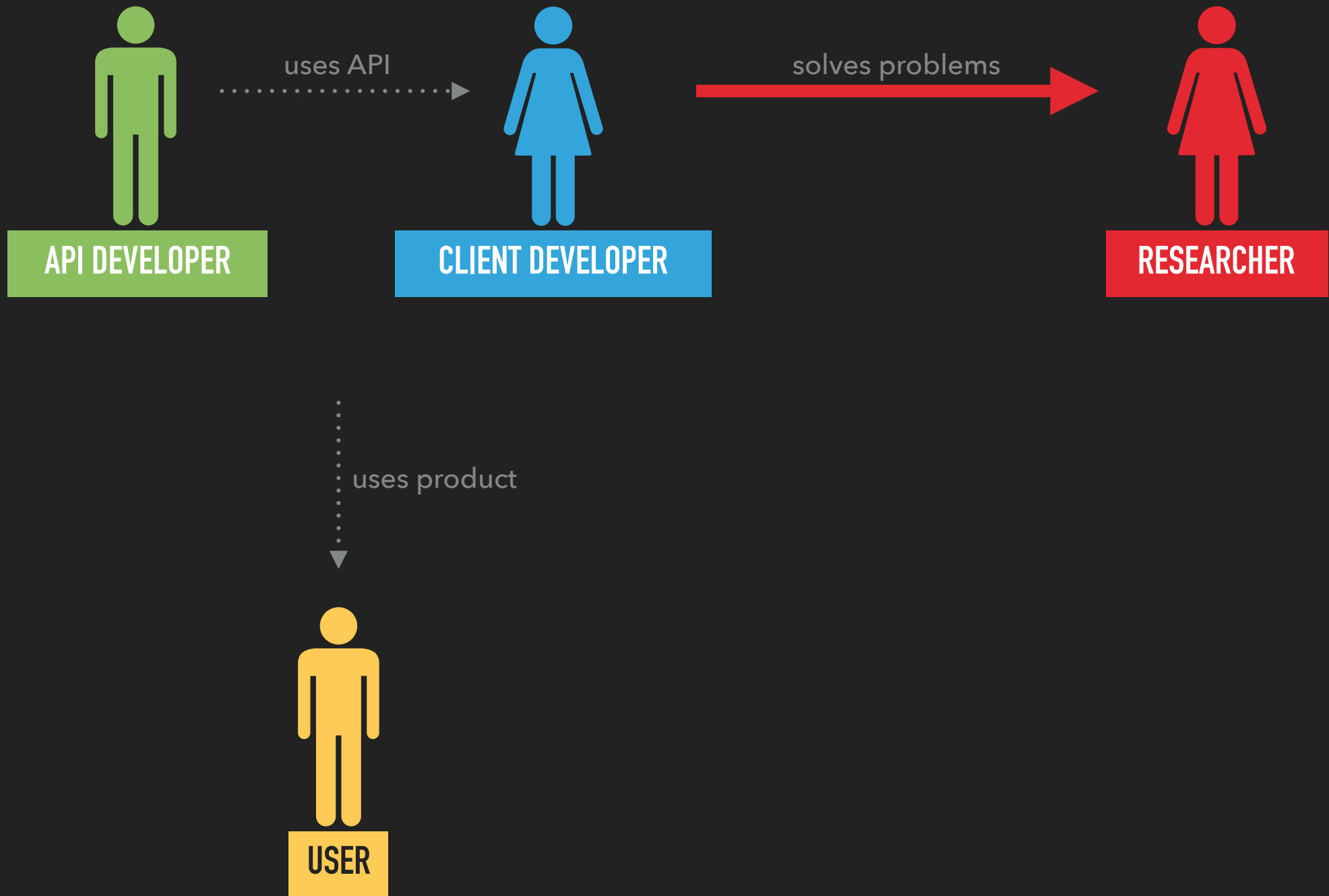
CO-EVOLUTION

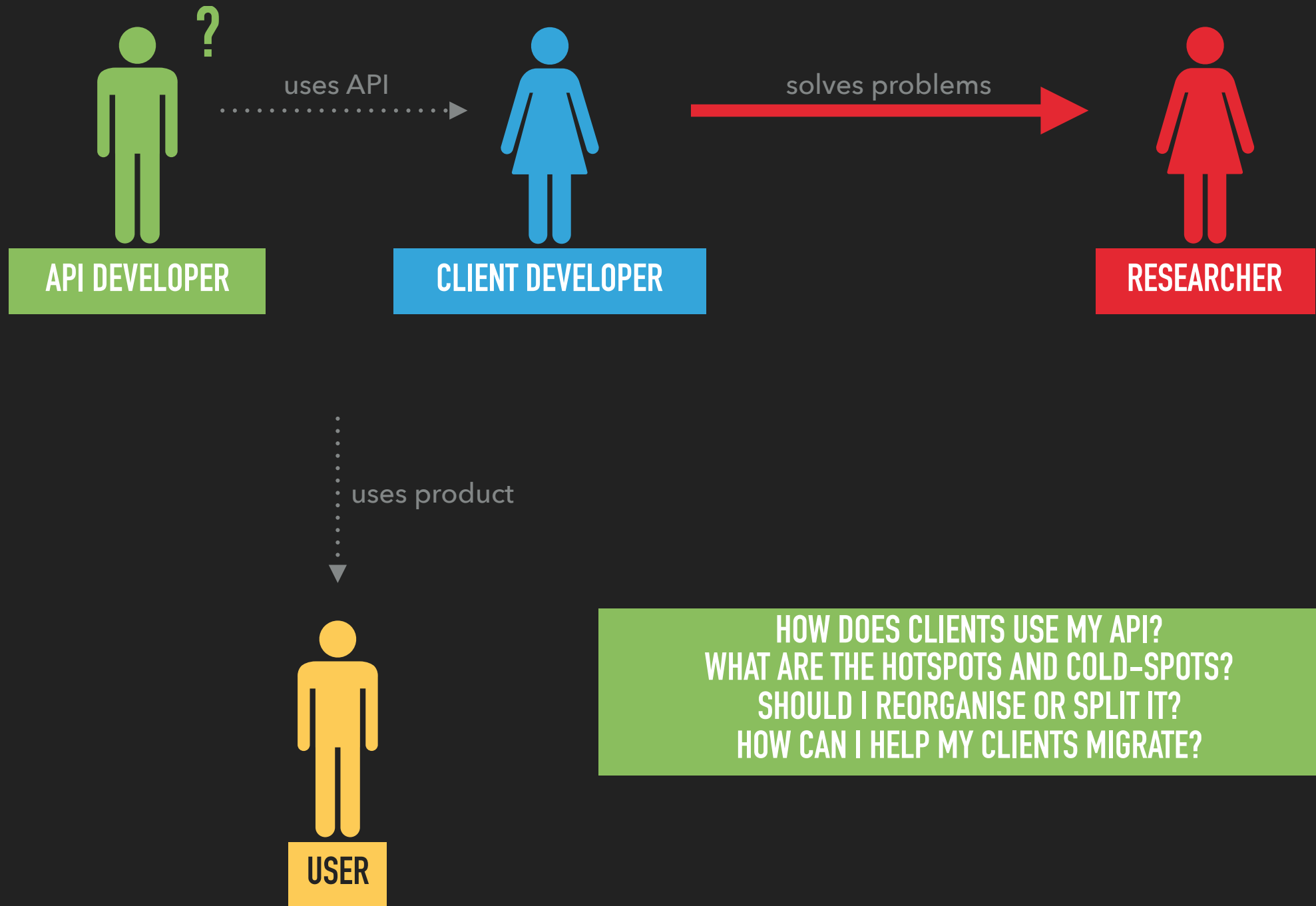


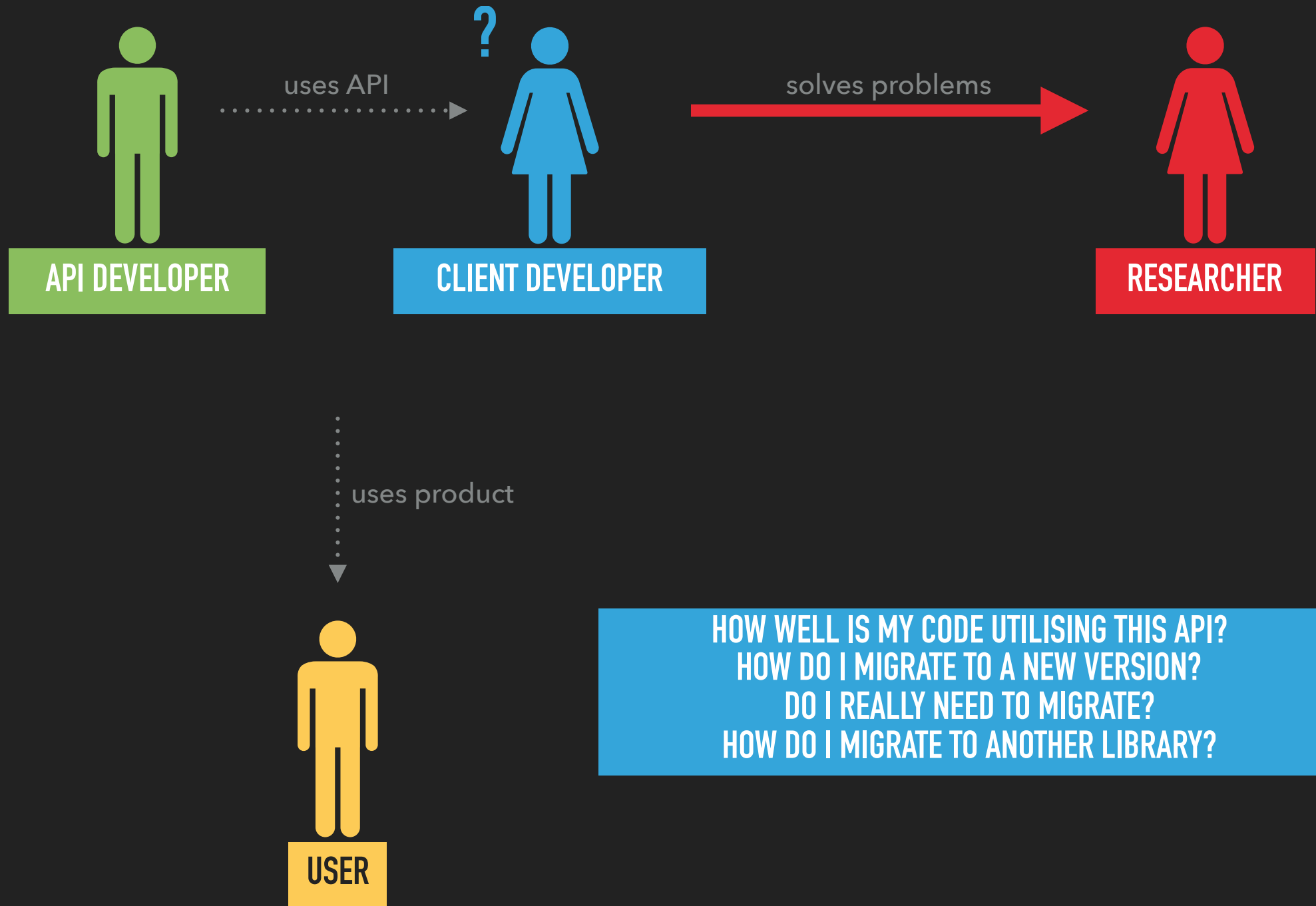


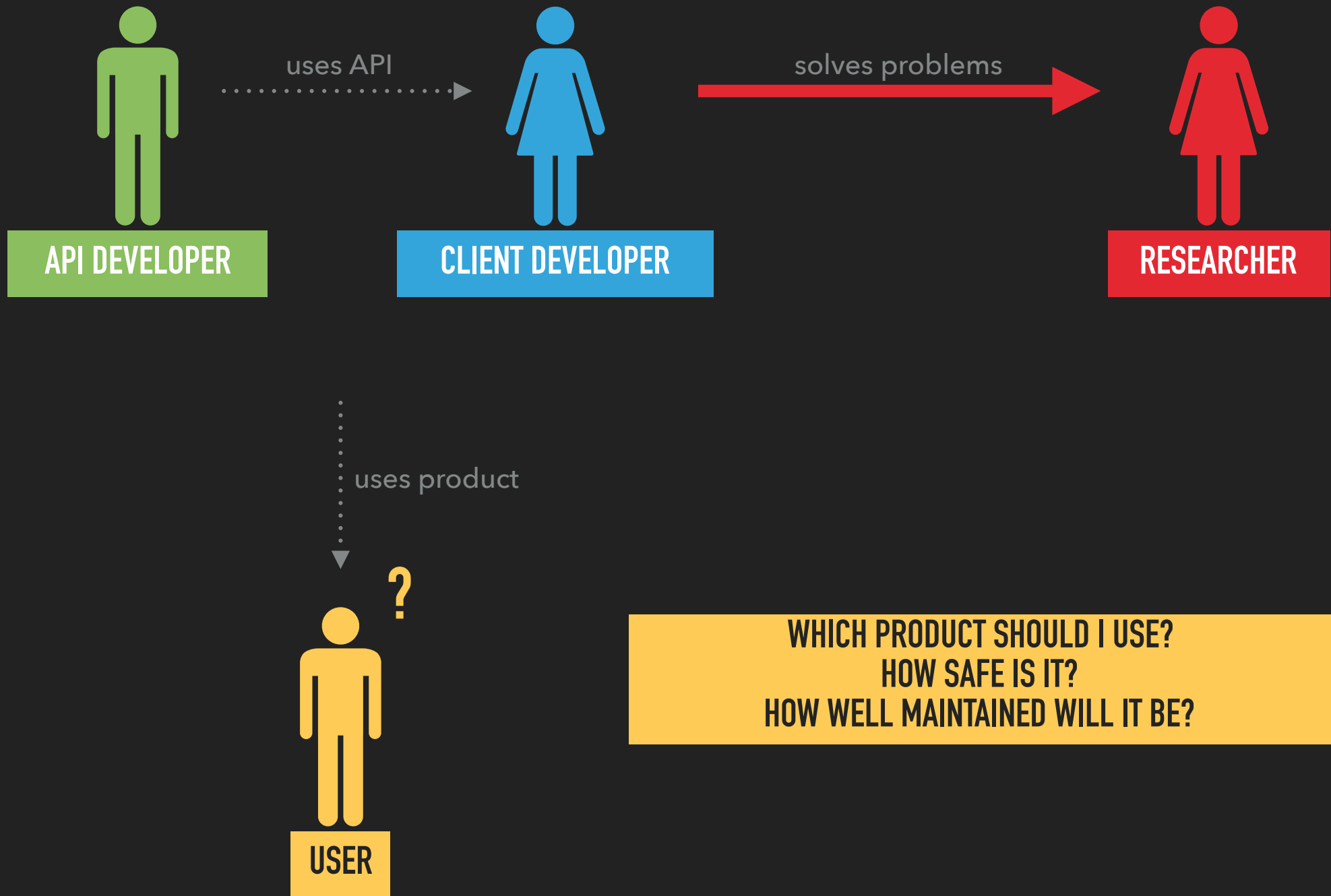
CO-EVOLUTION

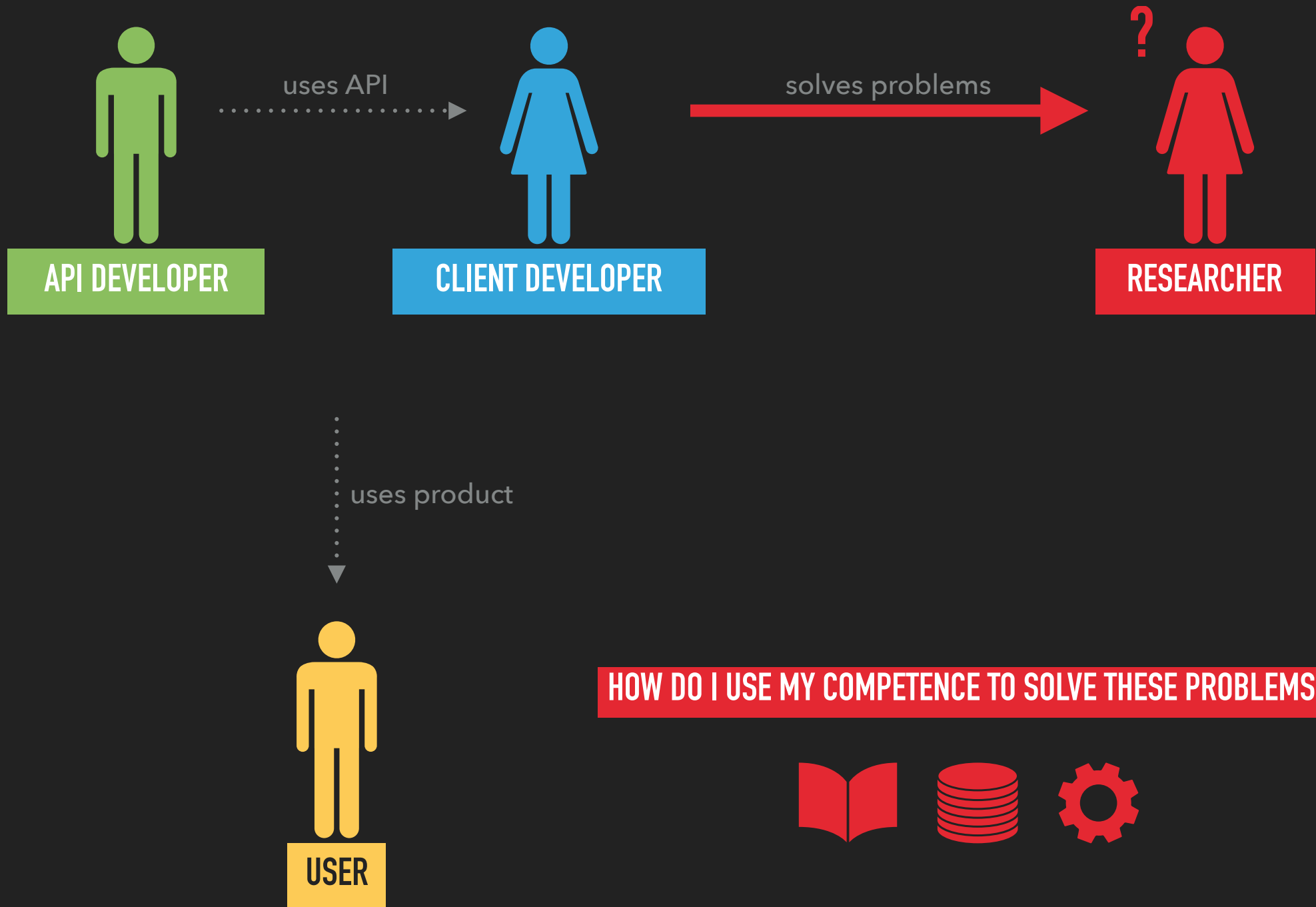












- Are the number of clients of this API increasing or decreasing?
- Do clients of this API usually immediately update their code upon an API release?
- What are hotspots in my API?
- Which methods are usually used together? In what order?

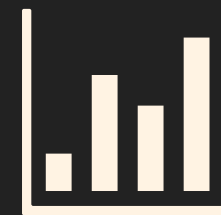
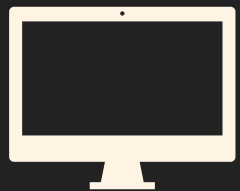
QUESTIONS

'REAL PROGRAMS'

COLLECT

ABSTRACT

DATASET

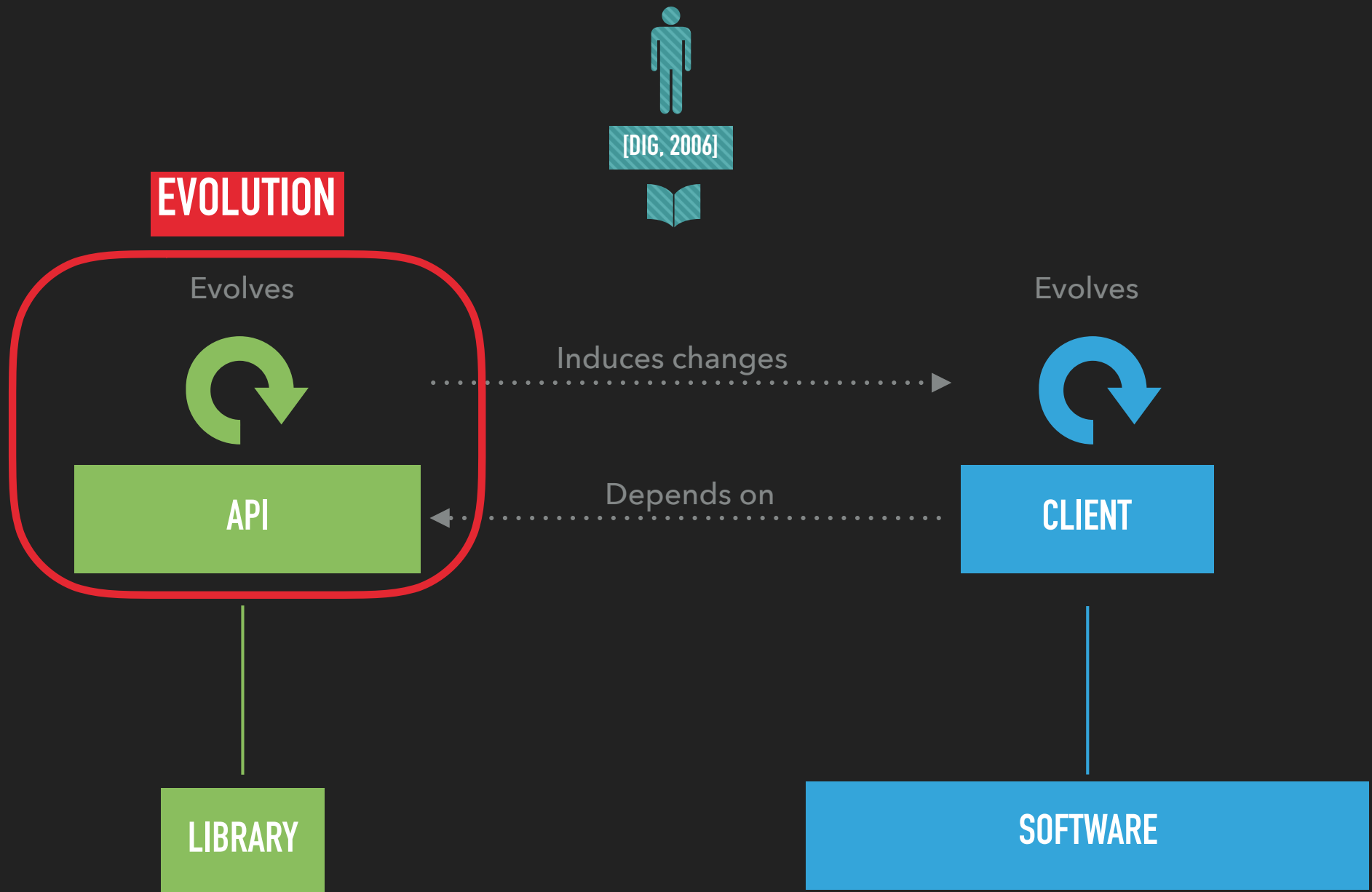


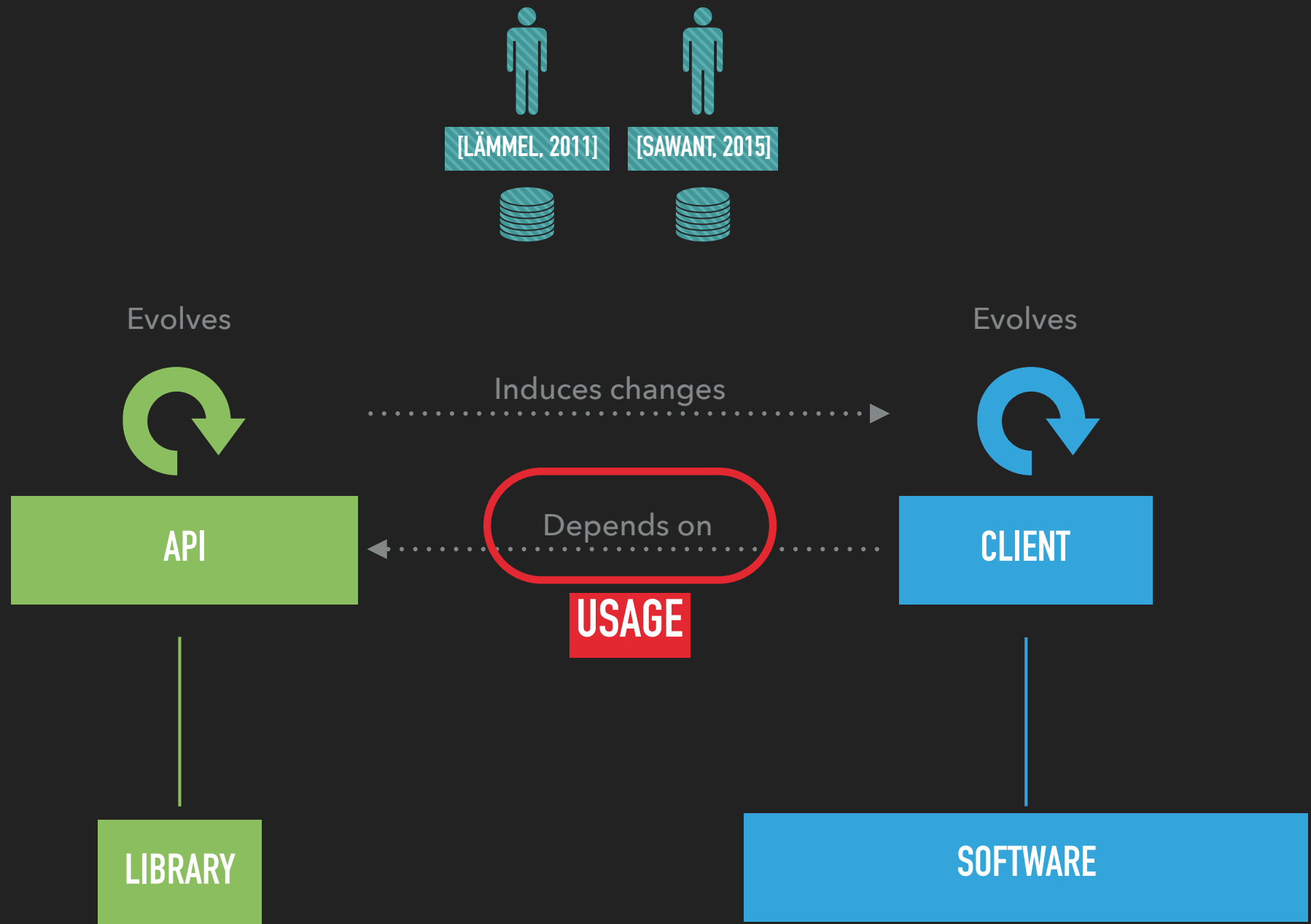
API

CLIENT











[DIG, 2006]



5 handpicked APIs
2 major releases
breaking changes
manual analysis



[LÄMMEL, 2011]



1476 SourceForge projects
69 APIS
per commit
automated analysis



[SAWANT, 2015]



20'263 GitHub projects
5 popular APIs
per commit
automated analysis



[SAWANT, 2017]

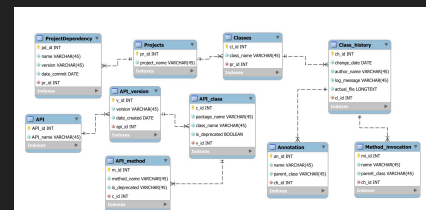


SQL queries

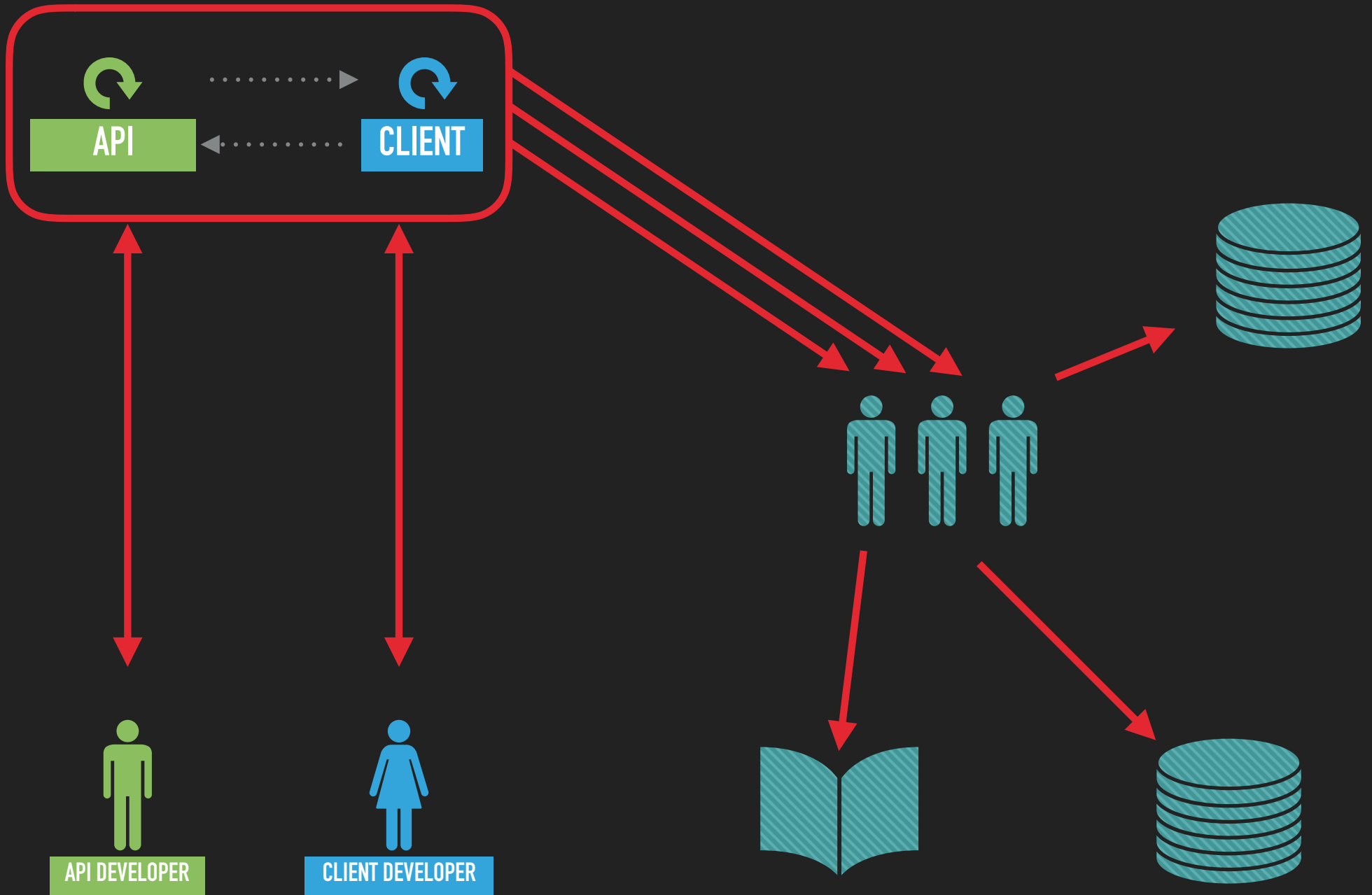


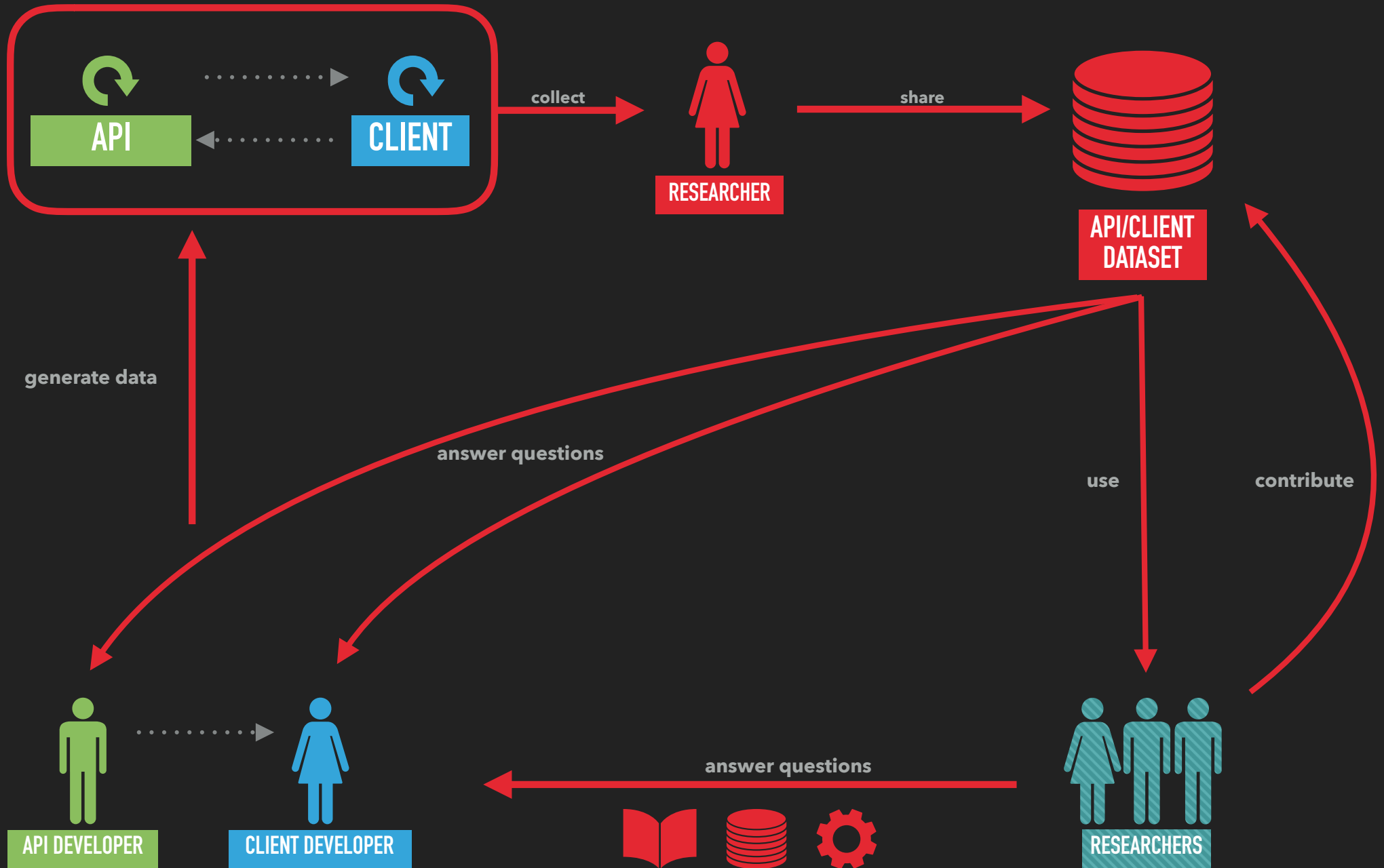
“80% REFACTORINGS”

“API FOOTPRINT”

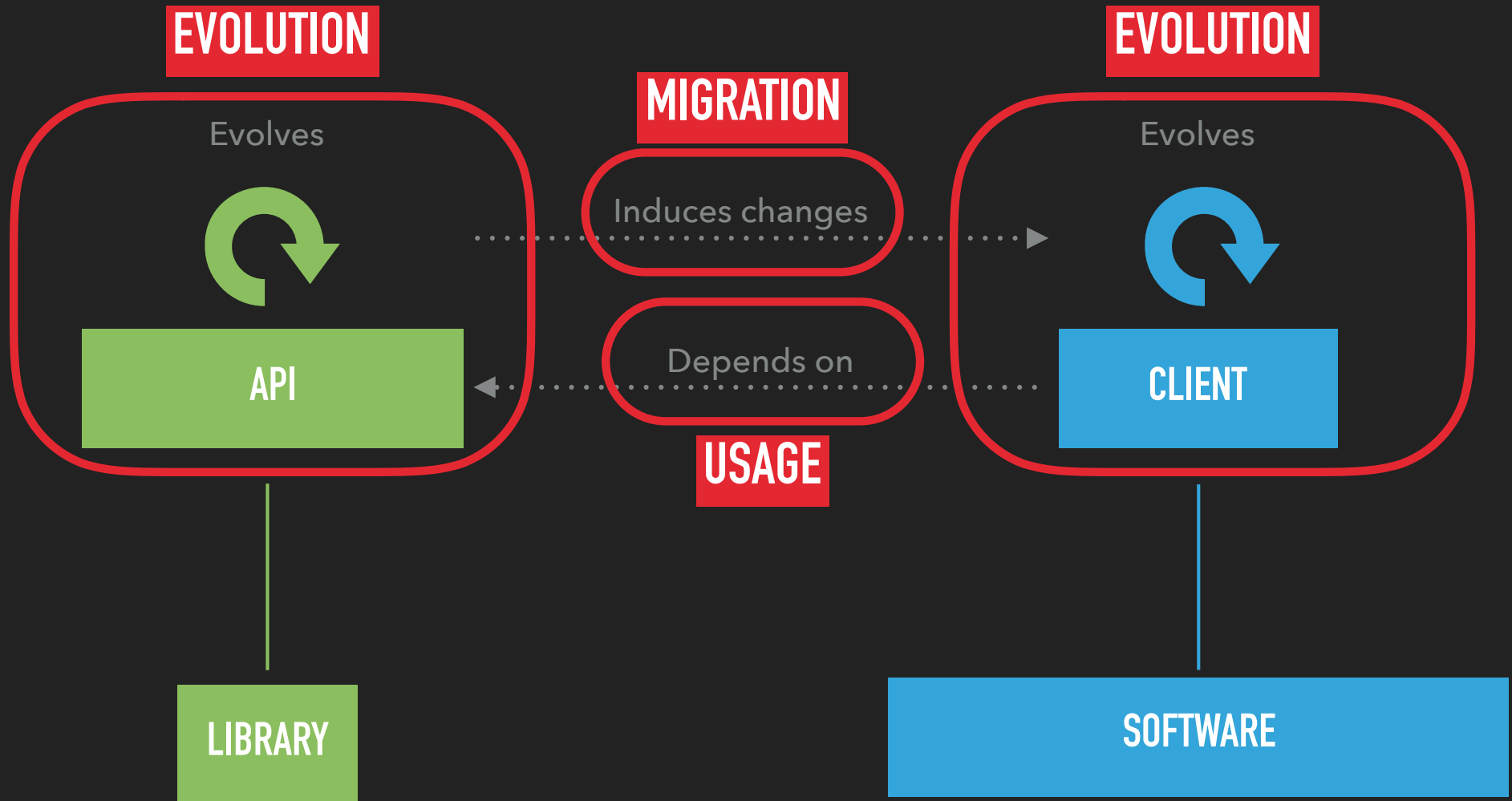


“DO CLIENTS MIGRATE?”
“API USE COVERAGE”





CO-EVOLUTION



PROBLEMS

- ▶ Complex interactions cannot be used automatically
- ▶ Results of previous research are difficult to reuse

OUR SOLUTION

- ▶ Make extendable dataset:
 'simple building blocks, complex patterns'
- ▶ Use knowledge base (Jena / Graal)
- ▶ Abstract (and extend) by **inference rules**
- ▶ Extendable by other researchers: **new rules, new results**

